

C1  
cancel

where  $\beta_2T$  is a lateral magnification of the second lens group at the telephoto end of said system.

### REMARKS

Reconsideration and allowance in view of the foregoing Amendment and the following remarks are respectfully requested.

Claims 1, 42, 43, 45-69 are pending in the application. Claims 1, 42, 43, 45, 46, 47, 49, 53, 54, 55, 56 are amended. Claim 44 is cancelled. Claims 61-69 are added.

Applicants are pleased to note that claims 56-60 are allowed. Applicants point out that claim 56 has received minor modifications to clarify the language of the claim. However, Applicants submit that these modifications are clarifying in nature only and that the substance of the claim has not been altered. Accordingly, Applicants respectfully submit that claim 56 remains allowable.

Claims 1, 42, 43, 44, 45, 50, 51, 52 were rejected under 35 U.S.C. §102(b) over Nakamura (U.S. Patent No. 5,671,062). Applicant respectfully submits that the amendments to claims 1, 42, 43, 45 obviate the rejection. In addition, Applicants respectfully submit that the rejection of claim 44 is now moot since this claim has been cancelled.

With respect to claim 1, Applicants note that it now recites said first lens group consists of one positive single lens alone." In contrast, as pointed out in the Office Action, Nakamura discloses a zoom lens system in which the first lens group has two lenses, which is different from the claimed invention (See Figs. 1, 2, 6, 10,

14, 18, 22). Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 U.S.C. §102(b) over Nakamura be withdrawn.

With respect to claim 42, Applicants point out that this claim now recites "said third lens group comprises three lenses, a positive lens, a positive lens, and a negative lens." In contrast, Nakamura discloses a zoom lens system in which the third lens group has two lenses (See Figs. 1, 2, 6, 10, 14, 18, 22). Accordingly, reconsideration and withdrawal of the rejection of claim 42 under 35 U.S.C. §102(b) over Nakamura is respectfully requested.

Regarding claim 43, Applicants observe that this claim has been rewritten in independent form and now recites, among other things, "said fourth lens group consists of one positive single lens alone." In contrast, Nakamura discloses a zoom lens system in which the fourth lens group comprises two lenses (See Figs. 1, 2, 6, 10, 14, 18, 22). Accordingly, Applicants respectfully request that the rejection of claim 43 under 35 U.S.C. §102(b) over Nakamura be withdrawn.

With respect to claim 45, Applicants point out that this claim has been rewritten in independent form and now recites, among other things, "said second lens group consists of a negative single lens, a negative single lens, and a positive single lens." In contrast, Nakamura discloses a zoom lens system in which the second lens group comprises one single negative lens, and a cemented lens which is composed of "a negative lens 22, and a positive lens 23 joined to the negative lens 22." (Col. 5, lines 10-11. Emphasis added) (See also Figs. 1, 2, 6, 10, 14, 18, 22) Therefore, Nakamura does not teach or suggest a zoom system in which the second lens group consists of three single lenses. Accordingly, Applicants respectfully

request that the rejection of claim 45 under 35 U.S.C. §102(b) over Nakamura be withdrawn.

Claims 50, 51 and 52, which depend from independent claim 1, 42 or 43, recite additional features of the invention and are allowable for at least the reasons discussed above, with respect to claims 1, 42 or 43. Accordingly, reconsideration and withdrawal of the rejection of claims 50, 51 and 52 under 35 U.S.C. §102(b) over Nakamura is respectfully requested.

Claims 46, 47, 48, 49, 53, 54 and 55 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicants note that claims 46, 47, 49, 53, 54 and 55 have been rewritten in independent form to include all of the limitations of claim 1. Accordingly, Applicants respectfully submit that claims 46, 47, 49, 53, 54 and 55, as amended, are allowable. Regarding claim 48, Applicants point out that this claim depends from allowable claim 47 and is patentable for at least the same reason given above related to claim 47. Consequently, Applicants respectfully submit that claim 48 is allowable.

Claims 61-69 are newly added to more fully claim the present invention. In this regard, Applicants respectfully submit that all of these claims are supported by the specification. Applicant respectfully submits that new claims 61-69 are patentable over all references of record. For example, there are at least the following distinctions over Nakamura (U.S. Patent No. 5,671,062)

New claim 61 recites three lenses in the third lens group. In contrast, the Nakamura reference discloses a third lens group that has only two lenses.

New claim 62 recites the third lens group is movable during zooming. The Nakamura reference shows that the third lens group remains fixed.

Claims 63-69 recite conditions which are not satisfied by the prior reference as tabulated below.

Nakamura

Example	1	2	3	4	5	6
(1) $0.5 <  F2/F3  < 1.2$	0.35 OUT	0.30 OUT	0.31 OUT	0.31 OUT	0.05 OUT	0.34 OUT
(2) $0.49 <  L3/L2  < 1$	0.00 OUT	0.00 OUT	0.00 OUT	0.00 OUT	0.00 OUT	0.00 OUT
(3) $2 < (F34w)/IH < 3.3$	8.02 OUT	8.12 OUT	8.19 OUT	7.80 OUT	12.1 OUT	7.64 OUT
(4) $0.6 <  F2/F3  < 1$	0.35 OUT	0.30 OUT	0.31 OUT	0.31 OUT	0.05 OUT	0.34 OUT
(5) $0.3 < F3/F4 < 0.8$	1.46 OUT	2.04 OUT	2.18 OUT	1.92 OUT	-2.30 OUT	1.73 OUT
(6) $0.4 <  \beta 2T  < 1$	2.55 OUT	2.48 OUT	2.61 OUT	2.25 OUT	0.09 OUT	2.25 OUT

In conjunction with the data on Example 5, the focal length found on the basis of the numerical data shown in the publication was different from that set forth therein. From a comparison of the drawings with the numerical data, r13 appears to be different from r15.

Furthermore, it appears that the figures for Example 5, shown in the above table, are far away from those for other examples because of errors in the data set forth in the publication.

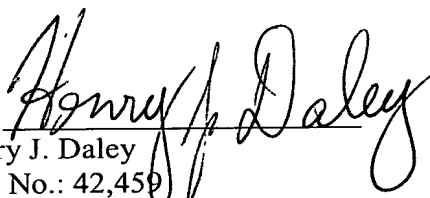
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached Appendix is captioned "Version with markings to show changes made".

Applicant has addressed all of the Examiner's rejections and rejections and respectfully submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please cancel claim 44 without prejudice or disclaimer.

Please amend claims 1, 42, 43, 45, 46, 47, 49, 53, 54, 55, 56 as follows:

1. (Twice amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group consists of [comprises two lenses, a negative lens and a positive lens, or] one positive single lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens, [and]

said third lens group has at least one aspherical surface therein[;], and

a negative lens is located nearest to an image side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40$$

... (7),

wherein  $v_{21}$  is an Abbe's number of said negative lens.

42. (Amended) A zoom lens system comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens[, or a negative lens],

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, [or two lenses, a positive lens and a negative lens,] and

said third lens group has at least one aspherical surface therein.

43. (Amended) A zoom lens system [according to claim 1, wherein the first lens group comprises one positive lens] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and  
a fourth lens group that has positive refracting power and is movable during  
zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive  
lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens  
and a negative lens, or two lenses, a positive lens and a negative lens,

said fourth lens group consists of one positive single lens alone,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an image side of the second lens group  
and satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

45. (Amended) A zoom lens system [according to any one of claim 1, 42 or  
43, wherein the] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an  
object side to an image plane side of said system during zooming from a wide-angle  
end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during  
zooming, wherein:



said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said second lens group consists of [comprises] a negative single lens, a negative single lens, and a positive single lens,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and  
a negative lens is located nearest to an image side of the second lens group  
that satisfies at least the following condition (7):

$$v_{21} < 40 \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

46. (New) A zoom lens system [according to any one of claims 1, 42 or 43, wherein the] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises a positive lens, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and  
a negative lens is located nearest to an image side of the second lens group  
that satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

47. (Amended) A zoom lens system [according to any one of claims 1, 42 or 43, wherein the] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises a positive single lens convex on an object side thereof and a doublet consisting of a positive lens convex on an object side thereof and a negative lens concave on an image side thereof,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an image side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

49. (Amended) A zoom lens system [according to any one of claims 1, 42 or 43, wherein the] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said fourth lens group has a surface with a stronger curvature on an object side thereof than on an image side thereof[.],

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein, and

a negative lens is located nearest to an object side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens.

53. (Amended) A zoom lens system [according to any one of claims 1, 42 or 43, wherein] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an image side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \quad \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and

a condition  $0.5 < |F_2 / F_3| < 1.2$  is satisfied.

54. (Amended) A zoom lens system [according to any one of claims 1, 42 or 43, wherein] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an image side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and

a condition  $0.49 < |L_3 / L_2| < 1$  is satisfied.

55. (Amended) A zoom lens system [according to any one of claims 1, 42 or 43, wherein] comprising in order from an object side of said zoom lens system:

a first lens group having positive refracting power;

a second lens group that has negative refracting power and moves from an object side to an image plane side of said system during zooming from a wide-angle end to a telephoto end of said system;

a third lens group having positive refracting power; and

a fourth lens group that has positive refracting power and is movable during zooming, wherein:

said first lens group comprises two lenses, a negative lens and a positive lens, or one positive lens alone,

said third lens group comprises three lenses, a positive lens, a positive lens and a negative lens, or two lenses, a positive lens and a negative lens,

said third lens group has at least one aspherical surface therein,

a negative lens is located nearest to an image side of the second lens group that satisfies at least the following condition (7):

$$v_{21} < 40 \dots (7),$$

wherein  $v_{21}$  is an Abbe's number of said negative lens, and

a condition  $2 < (F_{3,4w}) / IH < 3.3$  is satisfied.

56. (Amended) A zoom lens system comprising in order from an object side of said system:

a first lens group having positive refracting power;

a second lens group having negative refracting power;

a third lens group having positive refracting power; and

a fourth lens group having positive refracting power,

wherein:

during zooming, a space between said first and second lens groups, a space between said second and third lens groups and a space between said third and fourth lens groups vary independently,

[wherein] said third lens group consists of, in order from an object side thereof, a double-convex positive lens, and a doublet consisting of a positive meniscus lens convex on an object side thereof and a negative meniscus lens, and said fourth lens group consists of a double-convex lens having a large curvature on an object side surface thereof, and

[wherein] a negative lens is located nearest to the image side of the second lens group and a condition  $v_{21} < 40$  is satisfied, wherein  $v_{21}$  is an Abbe's number of said negative lens.

Claims 61, 62, 63, 64, 65, 66, 67, 68, 69 are new.

End of Appendix.